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## Trade associations and labor organizations as intermediaries for disseminating workplace safety and health information

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### Abstract

**Background**—There has not been a systematic study of the nature and extent to which business and professional trade associations and labor organizations obtain and communicate workplace safety and health information to their members. These organizations can serve as important intermediaries and play a central role in transferring this information to their members.

**Methods**—A sample of 2294 business and professional trade associations and labor organizations in eight industrial sectors identified by the National Occupational Research Agenda was surveyed via telephone.

**Results**—A small percent of these organizations (40.9% of labor organizations, 15.6% of business associations, and 9.6% of professional associations) were shown to distribute workplace safety and health information to their members. Large differences were also observed between industrial sectors with construction having the highest total percent of organizations disseminating workplace safety and health information.

**Conclusion**—There appears to be significant potential to utilize trade and labor organizations as intermediaries for transferring workplace safety and health information to their members. Government agencies have a unique opportunity to partner with these organizations and to utilize their existing communication channels to address high risk workplace safety and health concerns.

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#### AUTHORS' CONTRIBUTIONS

All authors contributed to the conception and design of the study. AO was responsible for drafting the survey instrument, obtaining required clearances, overseeing the contract for data collection, and writing the initial draft manuscript. JW was responsible for the sampling design and performed all statistical analyses. PS provided overall guidance for the project and edited various draft manuscripts. All authors approved the final version of the manuscript for publication.

#### ETHICS APPROVAL AND INFORMED CONSENT

A determination was made by the Chair of the NIOSH IRB that human subjects clearance was not required based on the regulations governing human subjects research at 45CFR46.102(d). No sensitive information was collected and participation was voluntary.

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#### DISCLAIMER

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the National Institute for Occupational Safety and Health.

## Keywords

health communication; labor organizations; labor unions; occupations; safety and health information; surveys and questionnaires; trade associations; trade unions; workers; workplace

## 1 | INTRODUCTION

Trade associations and labor organizations are two types of organizations that can serve as important intermediaries for transferring health and safety information to their members. Trade associations, categorized as either business associations (employer organizations) or professional associations (individual member organizations), are made up of businesses and/or individuals that operate in the same market or sector and have common interests.<sup>1</sup> Business associations generally have member companies within a particular industry. These associations may focus on a specialized industry within a sector, such as roofing within construction, or may focus on a broad industrial sector, such as manufacturing. Professional associations—also called professional organizations or professional societies—usually consist of individual members sharing a common profession with specific education and training requirements such as doctors, lawyers, engineers, and architects.<sup>2</sup> Both business and professional trade associations are usually nonprofit organizations which serve the interests of their members within a common field of activity. These associations exist to represent and promote the shared interests of their members and provide these members with services that are often too costly or time-consuming for individual members to perform on their own such as monitoring government regulations, conducting industry research, collecting statistical information, and producing educational programs and materials.<sup>1,3–6</sup>

Labor organizations are considered organizations of any kind in which employees participate and which exists for the purpose, in whole or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours of employment, or conditions of work (29 U.S.C. §152).<sup>7</sup> The IRS defines a “Labor Organization” in section 501c5 of the tax code as being an association of workers who have combined to protect or promote the interests of the members by bargaining collectively with their employers to secure better working conditions, wages, and similar benefits. Labor unions are the most widely recognized type of labor organization.<sup>8</sup> Unions, as an employee’s organization, focus on protecting and promoting employee’s interests at the work place, mainly through negotiations means and collective consulting with the employers.<sup>9</sup> In 2016, the union membership rate—the percent of wage and salary workers who were members of unions—in the United States was 10.7% and included 7.1 million public sector employees and 7.4 million workers in the private sector.<sup>10</sup>

A number of models have been proposed for using intermediary organizations to reach businesses with safety information and services.<sup>11–13</sup> Intermediary organizations are those organizations that provide goods or services to businesses, including information services. Intermediary organizations can include both for-profit and nonprofit organizations such as chambers of commerce, trade associations, labor organizations, local civic and community groups, academic institutions, faith-based organizations, and private corporations. They can

play an integral role in promoting business linkages. Information intermediaries as defined by Wolmack,<sup>14</sup> include any system that mediates between the producers of information and the consumers of information. However, the intermediary must provide some added value such as higher-quality information, more complete or better organized information and/or cheaper, or more accessible information.<sup>15</sup> Governmental public safety/health organizations can use the delivery channels within these intermediary organizations to transfer workplace safety and health information to businesses, especially small and medium size establishments. Intermediary organizations have been shown to play an important role in disseminating occupational health and safety programs to small businesses.<sup>16</sup>

The provision of information is a core function of most trade associations and they often promote themselves as being trusted sources of information central to their industry. Wilts and Meyer<sup>17</sup> highlight the role of business associations as important information intermediaries, especially with respect to information on government regulations. The provision of information may be a direct part of the commercial services offered by business and professional trade associations such as publications (including newsletters, journals, and magazines), workshops, seminars, and conferences dealing with current issues relevant to a particular industry and these associations may also serve as the natural suppliers of industry-specific education and training.<sup>1</sup> Once the intermediary has obtained and organized information, there is little cost to distribute this information since the costs associated with the physical distribution of information are small and tend to decrease as electronic forms of distribution increase.<sup>13</sup> However, the time and attention of individual business owners or workers is scarce, creating important opportunities for trade association and labor unions to better serve their clients by providing needed information. According to Boléat,<sup>4</sup> the most important area where associations are counted on to provide high quality information is with respect to government legislation or regulations. They are also counted on to provide updates regarding changes in standards that impact their industry.<sup>3</sup>

Labor unions have championed worker safety as a core value throughout their history and have continued to invest in health and safety education and technical expertise, in part to improve their appeal among workers.<sup>18</sup> Unions may serve as intermediary organizations that provide members with information and training on workplace safety and health issues.<sup>6,19,20</sup> Unions have been shown to efficiently gather and disseminate information on the existence of workplace laws and rights, and to provide this information to members through educational programs, training, or through dissemination of educational materials.<sup>21</sup> Labor organizations also provide information on specific issues occurring within a sector, particularly in the area of safety and health,<sup>22</sup> and this information may be collected and disseminated through formal programs or informally through the union structure or through fellow members.<sup>21</sup> These organizations serve as workplace agents that can gather and disseminate information, thereby lowering the cost of information acquisition faced by individuals.<sup>21</sup> Labor unions serve as labor market intermediaries, entities that interpose themselves between workers and firms to facilitate, inform, or regulate how workers are matched to firms, how work is accomplished, and how conflicts are resolved.<sup>23</sup> In this role, labor unions try to influence firm and industry practices related to hiring, skill upgrading of workers, and work organization.<sup>24</sup>

The National Institute for Occupational Safety and Health (NIOSH) has a long-standing history of partnering with individual labor organizations and trade associations on projects designed to prevent occupational injuries and illness. However, this study was NIOSH's first effort to systematically obtain information from trade associations and labor organizations within the eight original National Occupational Research Agenda (NORA) industrial sectors regarding the extent to which they provide workplace safety and health information to their members. The eight NORA industrial sectors include agriculture, forestry, and fishing (AFF); construction (CON); healthcare and social assistance (HAS); manufacturing (MAN); mining (MIN); services excluding healthcare and social services (SER); transportation, warehousing and utilities (TWU); and wholesale and retail trade (WRT). Information was collected on: (1) where these organizations obtain their safety and health information; (2) the channels of communication used by these organizations to communicate with their members; (3) whether they disseminate workplace safety and health information through these channels; and (4) the extent to which they provide workplace safety and health training to their members. The results will be used as a benchmark for future interactions with these important intermediaries which directly contribute to the safety and health of working men, women, and teens.

## 2 | MATERIALS AND METHODS

A telephone survey was administered to trade associations and labor organizations. The associations and organizations were categorized within the eight original NORA industrial sectors as defined by NIOSH, to examine the nature and extent to which business and professional trade associations and labor organizations obtain and communicate workplace safety and health information to their members.<sup>25</sup> The sampling frame was obtained from the 2006 edition of the Gale,<sup>26</sup> a leading source of information on associations and professional societies with coverage of 22 000 national associations in the United States. To identify the associations to be included in the sampling frame from the Associations Unlimited database, the 4-digit Standard Industrial Classification (SIC) code corresponding to the general nature of the association's activities and the code corresponding to the industry that the association serves were used. Within this database, entities commonly referred to as trade associations were divided into two types: businesses associations (SIC8611) and professional organizations (8621). Labor organizations were identified using SIC 8631. Due to the small number of labor organizations identified within the Associations Unlimited database, the sample was enriched with additional labor organizations found using the Google search engine and terms such as labor organization(s), labor union(s), and union(s).

After elimination of duplicate organizations, the sampling frame consisted of 6748 organizations including 2634 business associations, 3867 professional associations, and 247 labor organizations. To account for possible differences in workplace safety and health information distribution among the three organizational types and within the eight industrial sector groups, the entire population was stratified into 24 subpopulations. The numbers of organizations in each of the 24 strata varied greatly, and estimates within each stratum required sufficient precision to make them useful. Therefore, the approach of disproportionate stratified sampling was carried out to ensure that there were enough cases

included in smaller strata for meaningful results. By this approach, the percent of members sampled differed from one stratum to another. To obtain the baseline results for each of the organization types distributing workplace safety and health information to their members, the data were weighted based on the sampling frequencies.

The final number of organizations in the sample ( $n = 2294$ ) included 1233 business associations, 844 professional associations, and 217 labor organizations. Nineteen of the 24 strata contained 120 or fewer organizations and therefore, every member of that group was included in the survey. For the five strata containing more than 120 organizations, a random sample of 120 organizations was selected to be surveyed with the goal of having 96 organizations from these strata agree to participate. A second random sample of 120 organizations was selected for any of the five strata not obtaining 96 participating respondents.

Prior to contacting survey respondents, clearances were obtained from the NIOSH Institutional Review Board (IRB) and U.S. Office of Budget and Management (OMB). Letters explaining the survey were sent to all organizations approximately 2–3 weeks before being contacted. The telephone survey was conducted by trained staff using the SelectSurvey® software tool.<sup>27</sup> Organizations were called during normal business hours, Monday through Thursday from May 2008 to May 2009. Up to ten contacts were attempted with each potential participant. While telephone was the preferred method of communication, e-mail, fax, and Internet searches were also used to collect survey information or update contact information. Efforts to contact an organization ceased when any of the following situations occurred: (1) unable to contact after ten attempts; (2) all methods of contact had been exhausted; or (3) proof was found that the organization was no longer active.

Interviewers called the trade associations and labor organizations and requested to speak with the individual responsible for workplace safety and health issues for that organization. Once the appropriate person was reached, the interviewer explained the survey and asked if the person was willing to participate. Participation in the survey was voluntary. The time to complete the survey ranged from 10 to 50 min. If a contacted organization consented to participate, the full survey was administered. Organizations that did not agree to take the full survey were requested to answer a two question short form. The same two questions were included in the full survey instrument. These questions were, “Does your association distribute workplace (worker for labor organizations) safety and health information to its members?” and “How important are workplace (worker for labor organizations) safety and health issues to your members using a scale of 1–5, with 1 being not at all important and 5 being very important?” For all questions within the survey, the term “workplace safety and health” was used when addressing professional and business associations and “worker safety and health” when addressing labor organizations. For convenience within this paper, the term workplace safety and health will be used unless directly referring to labor organizations.

### 3 | RESULTS

A response rate of 93.5% was achieved among the 2083 organizations found to be currently active at the time of the survey, when considering both the full survey instrument and short form combined. Most of the 254 organizations which could not be contacted were determined to be not active meaning they were no longer in existence or had non functioning phone numbers and no other contact information ( $n = 211$ ). Ninety-two organizations elected not to participate in the full survey or answer the two-question short form. Out of the 1948 responding organizations, 308 (16%) completed the full-survey instrument and 1640 (84%) completed the two-question short form. The interviewers reported that the low percentage of organizations completing the full-survey instrument was in large part due to the survey respondent indicating a lack of occupational safety and health activities conducted within these organizations.

#### 3.1 | Results for full survey instrument and short form combined

The primary question of interest for this survey was what percent of trade associations and labor organizations disseminate workplace safety and health information to their members. The weighted analysis presented in Table 1. shows that 40.9% of labor organizations, 15.6% of business associations, and 9.6% of professional associations indicated they disseminate workplace safety and health information to their members. Of the 1640 organizations completing the short form, only 7.5% of labor organizations, 0.8% of business associations, and 1.5% of professional association indicated they disseminate this information to their members. This was in sharp contrast to those completing the full survey instrument, where over 95% of all three organization types indicated they disseminate workplace safety and health information to their members.

The results also revealed large differences between the industrial sectors; however, it is important to note that some of the estimates were based on a small number of responses. Figure 1 shows the results for the 24 organization/sector groups for all survey responses (full survey and short form combined) with the construction sector having the highest total percent of organizations disseminating workplace safety and health information. Over 85% of the labor organizations within the construction sector indicated they disseminate worker safety and health information to their members. The figure also shows 100% labor organizations in the wholesale and retail trade sector disseminating this information; however there was only 1 union in this sector. The service sector had the lowest percent with 5.7% of business associations and 22.9% of labor organizations disseminating workplace safety and health information.

All contacted organizations were asked about the importance of workplace safety and health issues to their members (Table 2). Unfortunately, most organizations answering the short survey form chose not to answer this question and many indicated that it was “not applicable” to their organization. As a result, over 95% of both business and professional trade associations that responded to the short form did not answer this question. Therefore, the results for the full survey instrument and short form combined showed that 53.8% of labor organizations indicated workplace safety and health issues to be of high importance to



their members while only 13.3% of the business associations and 8.0% of the professional associations indicated high importance.

When considering only the organizations that responded to the full survey instrument (where over 95% of all three organization types indicated they disseminate workplace safety and health information to their members), between 69–91% of all three organization types stated that their members considered workplace safety and health issues to be of high importance to their members (Table 2). Figure 2 shows the results by individual sector, where the construction, manufacturing, and mining sectors showed the highest percent of members indicating workplace safety and health of high importance (over 80% of all three organization types). The service sector and the wholesale and retail trade sector had the lowest percent indicating workplace safety and health of high importance to its members with the exception of the one responding labor union in the wholesale and retail trade sector.

### 3.2 | Detailed Responses from Full Survey Instrument

**3.2.1 | Job responsibilities with respect to workplace safety and health**—The 308 respondents to the full survey instrument were asked about their job responsibilities with respect to workplace safety and health including whether workplace safety and health was included as part of their job responsibilities and what percent of their time was spent on workplace safety and health issues. Even though the survey respondent was the individual responsible for workplace safety and health issues at the responding organizations, the results showed wide variability in whether workplace safety and health was actually considered part of the respondent's job responsibilities, ranging from 97% of those employed by labor union, 81% of those employed by business associations, to 43% of those employed by professional associations. Differences were also seen in the amount of time respondents spent on workplace safety and health issues, with those spending more than 50% of the time on workplace safety and health issues ranging from 48% of the labor organizations respondents to 23% of the businesses associations respondents and 18% of the respondents from professional associations.

**3.2.2 | Workplace safety and health information: Sources and communication channels**—Figure 3 shows that a wide range of sources of workplace safety and health information are used by these organizations. Government agencies were the primary source of information for both business and professional trade associations and second for labor organizations behind labor unions. Approximately, 40 different government agencies were mentioned as a source of workplace safety and health information with the Occupational Safety and Health Administration (OSHA) mentioned by 50% of those surveyed, NIOSH mentioned by 25%, and the Environmental Protection Agency (EPA) mentioned by 10%. Other sources frequently mentioned included commercial publications, professional associations, and academic institutions. Insurance companies were also identified as a common source by about one third of both business and professional associations.

Information obtained on communication channels available for disseminating information to members included websites, conferences, e-mail, magazines, newsletters, and technical journals. Table 3 shows that more than 90% of all three organization types had a website,

and most indicated that they use their website to disseminate workplace safety and health information. A small percentage (28.1% for labor organizations, 20.5% for business associations, and 11.4% for professional associations) indicated they provide workplace safety and health information in a language other than English on their website, with Spanish being mentioned most often.

Information also was obtained about conference sponsorship with more than 90% of business and professional associations and 75% of labor organizations indicating that they sponsor one or more conferences (Table 3). Among those organizations that sponsor a conference, more than three-fourths include workplace safety and health presentations at their conferences and more than half offer workplace safety and health training at these events.

E-mail was the next most available communication channel, with more than 90% of both business and professional associations and 70% of labor organizations indicating the availability of e-mail (Table 3). Relatively similar percentages of the three organization types indicated they had a newsletter (53.8–72.4%) or magazine (45.4–57.9%), with a smaller percentage having a technical journal (10.9–38%). The majority of the organizations with these communication channels indicated they use these channels to disseminate workplace safety and health information to their members.

**3.2.3 | Workplace safety and health training**—Training is an important function of trade associations and labor organizations, with more than half of all three organization types indicating they provide workplace safety and health training to their members (76.9% of labor organizations, 63.2% of professional associations and 55.9% of business associations) (Table 4). The survey inquired about 18 specific topics for workplace health and safety training. Among those organizations that provide training, the courses offered by more than 50% of each of the organization types included emergency preparedness, equipment safety, hazardous substances, health and safety programs, lifting safety, OSHA regulations, and personal protective equipment. The training courses offered least frequently included those on explosives, special worker populations, and workplace violence. Among the organizations that provide training, 44% of the labor organizations, 30% of the business associations and 20% of the professional associations indicated they provide training in a language other than English, with Spanish being the language most often mentioned.

**3.2.4 | Workplace safety and health materials disseminated**—A relatively large number of the organizations—approximately 70% of both labor organizations and business associations and 40% of professional associations—indicated they disseminate workplace safety and health materials to their members beyond those provided through formal safety and health training. The most common formats used to disseminate this information included fact sheets, brochures, and safety manuals (Table 5). The source of these materials was not provided. Of those organizations that distributed these materials, labor organizations indicated the largest percentage distributing non-english information at 37%, with Spanish being the primary non-english language for these materials.



### 3.2.5 | Workplace safety and health needs and interest in NIOSH information

**and partnering**—Respondents were asked whether their organization had unmet needs with respect to workplace safety and health (Table 6). More than 60% of labor organizations indicated that they had unmet workplace safety and health needs, with the percentage dropping to 34.4% of business associations and 26.1% of the professional associations. Common themes for unmet workplace safety and health needs included up-to-date statistics and targeted sector specific resources, OSHA training and materials, bilingual materials (especially in Spanish), additional funding for workplace safety and health, information on slips-trips-and-falls, and chemical safety.

Organizations were also asked about their interest in receiving free worker safety and health information from NIOSH that they could distribute to their members. Interest in receiving this information was indicated by approximately 75% of business and professional associations and 90% of labor organizations (Table 6). Respondents also were asked whether they would be interested in having NIOSH contact them about partnering on a workplace safety and health issue. Approximately, 71% of labor organizations, 56% of business associations, and 48% of professional associations indicated an interest in being contacted about a future partnership with NIOSH.

## 4 | DISCUSSION

Both trade associations and labor organizations have been shown to be potential information intermediaries for reaching their members. However, the survey results indicate that only 40.9% of all labor organizations, 15.6% of business associations, and 9.6% of professional associations provide their members with workplace health and safety information. The percent disseminating workplace safety and health information was greatest within the construction sector and lowest for the service sector. Labor organizations were shown to be twice as likely as either business or professional trade associations to disseminate workplace safety and health information to their members. A higher percent of the labor organization having someone whose job responsibilities includes workplace safety and health, as seen in the full survey respondents, may be a contributing factor to the increased level of information dissemination among labor organizations. The results of the study also show that government agencies—especially the OSHA, which was mentioned by approximately half of all organizations—are primary sources of workplace safety and health information for both business and professional trade associations and for labor organizations. Approximately, 40 different government agencies were mentioned as being providers of workplace safety and health information.

Sinclair proposed the “initiator-intermediary-small business diffusion model.” This model proposes that initiating organizations such as governmental public health/safety organizations must focus as much attention on the intermediary organizations as they do on the small businesses for there to be transfer of workplace safety and health information.<sup>13</sup> According to Sinclair<sup>13</sup> since both parties have to be motivated to interact, there must be added business value for both the intermediaries and the small businesses being targeted. Cunningham and Sinclair<sup>28</sup> tested the model and determined a key element for success of workplace safety and health engagement by an intermediary organization was the presence

one or more champions for workplace safety and health as well as supportive opinion leaders.

Ito et al<sup>29</sup> found that membership in an industry-wide trade association network facilitated maintaining safety and health, because the risk situations were shared among the participating industries. Membership in a trade or business association was also found to be a factor in health and safety compliance-related improvements made within small businesses<sup>30</sup> and research by<sup>6</sup> highlight the engagement of employer organizations as a best practice to improve workplace safety and health. Researchers in Sweden, New Zealand, and the United States have shown that intermediary organizations serve as promising delivery channels between an initiator organization (often governmental public health/safety organizations) and small businesses.<sup>13,15,28,31</sup>

Small and medium size enterprises are influenced with respect to workplace safety and health by key stakeholders including enforcement agencies, insurance companies, suppliers, and trade associations. It has been proposed that to reach these businesses with health and safety information, government commitment is essential and involves formal and informal intermediaries such as industry associations, networks, and services (eg, public health services), and local community groups (eg, church communities).<sup>32</sup>

OSHA, currently through its Alliance Program, joins with unions, trade or professional organizations, faith- and community-based organizations, businesses, and educational institutions to leverage resources and expertise to help raise awareness of OSHA's rulemaking and enforcement initiatives, promote both outreach and communication, and foster education and training efforts. The EPA also engages in partnerships with federal and regional agencies and nonprofit organizations to address issues such as smart growth, sustainable water infrastructure, and voluntary energy and climate programs. However, these results indicate that there is still substantial, unrealized opportunity, especially within the professional and business associations, to further utilize these intermediaries as channels for disseminating workplace safety and health information.

Given that trade associations and labor organizations are important intermediaries between businesses, workers, and government agencies, and that these organizations rely on government agencies as an important resource for workplace safety and health information, there is a unique opportunity to use trade associations and labor organizations as channels for transferring tailored, workplace safety, and health information to individual workers within labor organizations, and to professional and business trade association members within specific industrial sectors. Since government agencies and public health organizations do not have the capacity to reach all businesses with relevant sector specific workplace safety and health information, intermediary organizations such as these may serve as an important resource for fulfilling this connection.

A limitation of these findings is that they pre-date the proliferation of social media (eg, Twitter, Instagram, Facebook, etc.) which may be important dissemination channels for these organizations. However, a 2016 survey benchmarking communication channels used by associations found that traditional communication channels such as conferences,

eNewsletters, and printed magazines were still the most highly rated communication channels by these organizations, although new forms were gaining traction including Facebook and on-line directories and career centers.<sup>33</sup> Additionally, advanced formats, such as smartphone apps, will allow intermediaries to customize the information they retrieve, decide what is relevant to their industry, and repackage it for dissemination to their members. Government agencies should take into account new communication technologies when designing the delivery of workplace safety and health information to these organizations to facilitate its rapid uptake.

## 5 | CONCLUSION

The survey results showed that business and professional trade associations and labor organizations have the capability to distribute workplace safety and health information to their members, although most were not doing so. Among those organizations that do distribute this information, most indicated an interest in receiving workplace safety and health information from a government agency, and many of these organizations also indicated an interest in partnering with a government agency on a health and safety problem. Given this, there appears to be significant potential to utilize trade and labor organizations to serve as intermediaries for transferring workplace safety and health information to their members. Furthermore, given these organizations' reliance on government agencies as a trusted source of workplace safety and health information, agencies such as OSHA, NIOSH, and the EPA have a unique opportunity to partner with these organizations to address their specific workplace safety and health needs and concerns.

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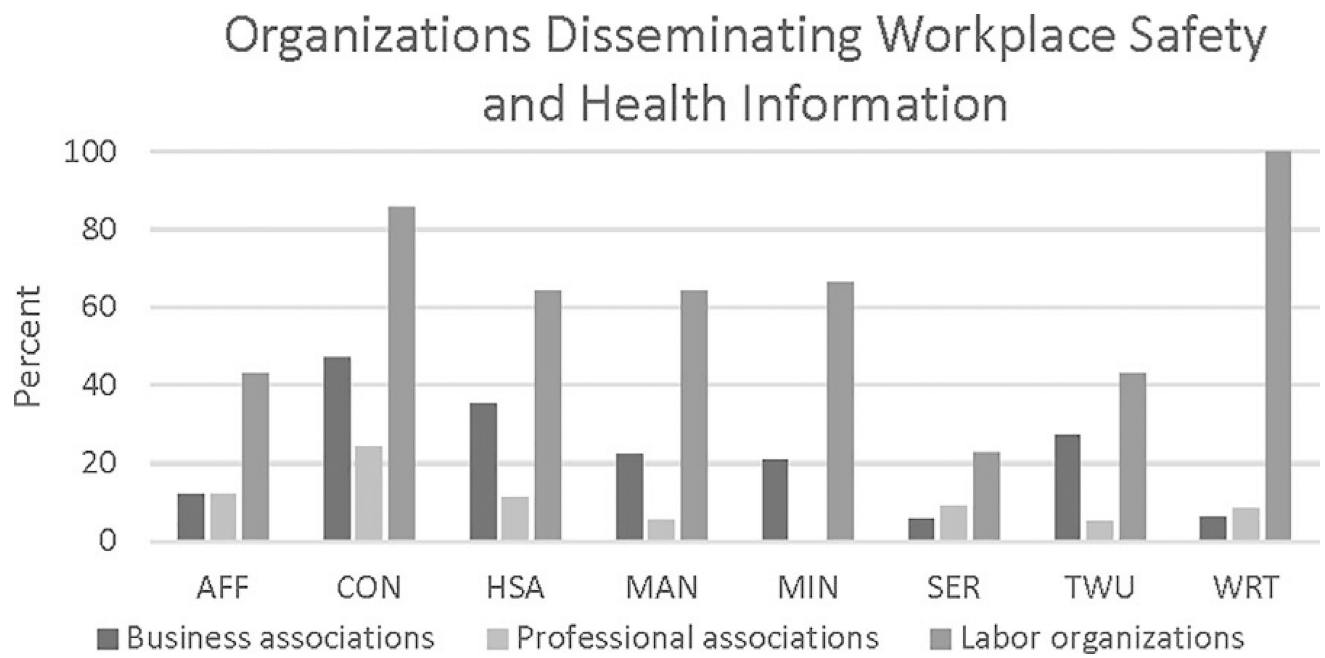
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## References

1. Munden, S. Managing continual improvement. London: Chartered Quality Institute; 2012. Available online at: [http://archive-org-2012.com/org/t/2012-12-25\\_1062943\\_26/Managing-continual-improvement-Chartered-Quality-Institute/](http://archive-org-2012.com/org/t/2012-12-25_1062943_26/Managing-continual-improvement-Chartered-Quality-Institute/) [accessed 2016 October 31]
2. Encyclopedia of Business, (online). 2. Farmington Hills, MI: Gale; 2017. Available online at: <http://www.referenceforbusiness.com/encyclopedia/Per-Pro/Professional-and-Trade-Organizations.html> [accessed 2017 March 17]
3. Bean, S. A “best practice guide” for trade associations. London, UK: Trade Association Forum; 2006.
4. Boléat, M. Managing trade associations. London, UK: Trade Association Forum; 2003.
5. MCI Group. Navigating the major trends affecting associations. White paper. Brussels: MCI Group; 2014. Available online at: [http://www.mci-group.com/en-GB/latest\\_articles/Navigating%20the%20Major%20Trends%20Affecting%20Associations](http://www.mci-group.com/en-GB/latest_articles/Navigating%20the%20Major%20Trends%20Affecting%20Associations) [accessed 2016 October 31]
6. Walters, D., Lamm, F. OHS in small organizations: some challenges and ways forward. Canberra, Australia: National Research Center for OHS Regulation; 2003.

7. United States Code. 29 U.S.C. § 152.
8. IRS (Internal Revenue Service). IRC 501(c)(5) organizations. Exempt organizations-technical instruction program for FY. Washington, DC: Internal Revenue Service; 2003. Available online at: <https://www.irs.gov/charities-non-profits/cpe-for-fy-2003-2> [accessed 2017 March 29]
9. B I neasa, C., Manolescu, A. The role of trade unions in regulating labor relations. Vol. 9. The Annals of The “ tefan cel Mare” University Suceava, Fascicle of The Faculty of Economics and Public Administration; 2009. p. 341-347.
10. BLS (Bureau of Labor Statistics). News Release. USDL-17-0107. Washington, DC: Bureau of Labor Statistics; 2017. Union members—2016. Available online at: <http://www.bls.gov/news.release/pdf/union2.pdf> [accessed 2016 October 31]
11. Hasle P, Bager B, Granerud L. Small enterprises: accountants as occupational health and safety intermediaries. *Saf Sci*. 2010; 48:404–409.
12. Hasle P, Limborg H. A review of the literature on preventive occupational health and safety activities in small enterprises. *Ind Health*. 2006; 44:6–12. [PubMed: 16610525]
13. Sinclair RC, Cunningham TR, Schulte PA. A model for occupational safety and health intervention diffusion to small businesses. *Am J Ind Med*. 2013; 56:1442–1451. [PubMed: 24115112]
14. Womack R. Information intermediaries and optimal information distribution. *Libr Inf Sci Res*. 2002; 24:129–155.
15. Glazer R. Measuring the knower: towards a theory of knowledge equity. *Cal Manag Rev*. 1998; 40:175–194.
16. Olsen K, Hasle P. The role of intermediaries in delivering an occupational health and safety programme designed for small businesses: a case study of an insurance incentive programme in the agriculture sector. *Saf Sci*. 2015; 71:242–252.
17. Wilts A, Meyer M. Small firm membership in national trade association. *J Pub Aff*. 2005; 5:176–185.
18. Cenicerros, R. [accessed 2016 October 31] Workplace safety a major push for unions. *Business Insurance News*. 2012. Available online at: <http://www.businessinsurance.com/article/20120212/NEWS07/302129974?template=printart>
19. Ethical Trading Initiative. Working with trade unions to improve working conditions: the benefits for retailers and suppliers. London: Ethical Training Initiative; 2010. Available online at: [https://s3-eu-west-1.amazonaws.com/www.ethicaltrade.org/files/shared\\_resources/benefits\\_of\\_working\\_with\\_trade\\_unions.pdf?CM4URS0uBQgix7zDa0qYFNxSc53E\\_Vg](https://s3-eu-west-1.amazonaws.com/www.ethicaltrade.org/files/shared_resources/benefits_of_working_with_trade_unions.pdf?CM4URS0uBQgix7zDa0qYFNxSc53E_Vg) [accessed 2016 October 31]
20. Walters, M., Mishel, L. How unions help all workers. Briefing paper no. 143. Washington, DC: Economic Policy Institute; 2003.
21. Weil, D. Individual rights and collective agents. The role of old and new workplace institutions in the regulation of labor markets. In: Freeman, RB, Hersch, J., Mishel, L., editors. *Emerging labor market institutions for the twenty-first century*. Chicago: University of Chicago Press; 2004. p. 13-44.
22. Viscusi, WK. *Risk by choice: regulating health and safety in the workplace*. Cambridge, MA: Harvard University Press; 1983.
23. Autor, D. Working Paper 14348. Cambridge, MA: National Bureau of Economic Research; 2008. The economics of labor market intermediation: an analytic frame-work.
24. Kazis, R. New labor market intermediaries: what’s driving them? Where are they headed? A background paper. Boston, MA: Massachusetts Institute of Technology; 1998.
25. Scholl, JC, Okun, AH., Schulte, PA., editors. NIOSH. Workplace safety and health information dissemination, sources, and needs among trade associations and labor unions. Cincinnati, Ohio: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH); 2017. publication No. 2017-166
26. Associations unlimited (online). Farmington Hills, MI: Gale; 2006.
27. SelectSurvey. ClassApps LLC; Kansas City, MO:
28. Cunningham TR, Sinclair R. Application of a model for delivering occupational safety and health to smaller businesses: case studies from the US. *Saf Sci*. 2015; 71:213–225. [PubMed: 26300585]

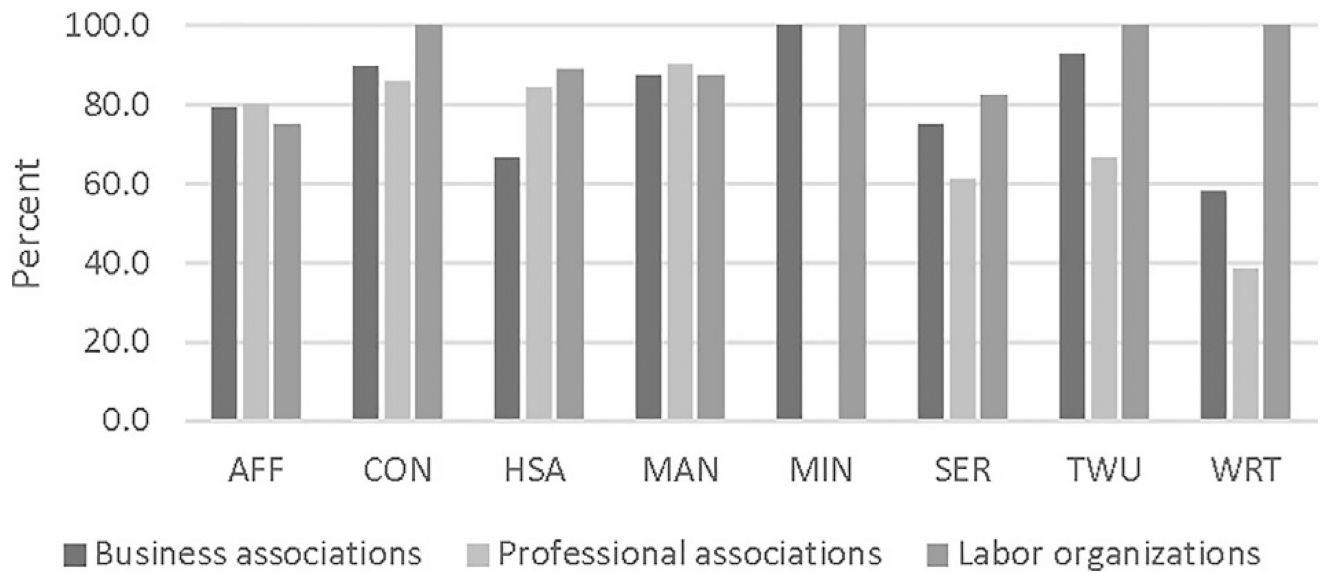
29. Ito A, Sakai K, Kogi K. Development of interactive workplace improvement programs in collaboration with trade associations of small-scale industries. *Ind Health*. 2006; 44:83–86. [PubMed: 16610539]
30. Baldock R, James P, Smallbone D, Vickers I. Influences on small-firm compliance-related behaviour: the case of workplace health and safety. *Environ Plann C*. 2006; 24:827–846.
31. Antonsson, A., Birgersdotter, L., Bornberger-Dankvardt, S. Small enterprises in Sweden: health and safety and the significance of intermediaries in preventive health and safety. Stockholm, Sweden: National Institute for Working Life; 1997. Available online at: <http://www.niwl.se/>
32. Legg S, Olsen K, Laird I, Hasle P. Managing safety in small and medium enterprises. *Saf Sci*. 2015; 71:189–196.
33. Andreu, J., Berkowitz, H., Bornmann, D., Plotke, D. Associations Communication Benchmarking Report. Gainesville, FL: Naylor Association Solutions; 2016. Available online at: <http://www.fsae.org/assets/docs/surveys/2016CommunicationsBenchmarkingReport.pdf> [accessed 2017 March 10]

**FIGURE 1.**

Workplace safety and health information dissemination by organization type and sector



## Organizations Indicating Workplace Safety and Health of High Importance



**FIGURE 2.**

Organizations responding to full survey instrument indicating workplace safety and health of high importance by organization type and sector



**FIGURE 3.**  
Sources of workplace safety and health information by organization type among those organizations responding to full survey instrument

**TABLE 1**

Workplace safety and health information disseminated by organization and survey type

Survey type	Business associations % (95% CI)	Professional associations % (95% CI)	Labor organizations % (95% CI)
Full survey instrument (FSI)	97.1 (94.5–99.7)	96.9 (93.5–100)	95.4 (90.1–100)
Short form (SF)	0.8 (0.2–1.3)	1.5 (0.2–2.7)	7.5 (2.3–12.7)
Combined	15.6 (13.2–18.0)	9.6 (6.8–12.4)	40.9 (34.1–47.8)

Weighted percentage of organizations with 95% confidence interval. Business associations (FSI = 178, SF = 889); Professional associations (FSI = 65, SF = 645); Labor organizations (FSI = 65, SF = 106).

**TABLE 2**

Importance of workplace safety and health issues to members (by survey type)

Organization	Business associations	Professional associations	Labor organizations
Full survey instrument	<i>N</i> = 178	<i>N</i> = 65	<i>N</i> = 65
No response % (95% CI)	0.3 (0.0–0.8)	3.8 (0.0–10.8)	1.5 (0.0–4.6)
High importance % (95% CI)	84.7 (78.5–91.0)	69.1 (53.4–84.8)	90.8 (83.5–98.0)
Lower importance % (95% CI)	15.0 (8.8–21.8)	27.1 (12.0–42.2)	7.7 (1.0–14.3)
Short form	<i>N</i> = 889	<i>N</i> = 645	<i>N</i> = 106
No response % (95% CI)	99.8 (99.4–100.0)	96.4 (94.3–98.4)	64.2 (54.7–73.6)
High importance (%) (95% CI)	0.2 (0.0–0.6)	2.3 (0.6–4.0)	31.1 (22.1–40.1)
Lower importance (%) (95% CI)		1.3 (0.1–2.6)	4.7 (0.65–8.9)
Combined	<i>N</i> = 1067	<i>N</i> = 710	<i>N</i> = 171
No response (%) (95% CI)	84.4 (82.0–86.8)	88.4 (85.4–91.6)	40.4 (33.1–47.6)
High importance % (95% CI)	13.3 (11.0–15.5)	8.0 (5.4–10.6)	53.8 (46.6–61.1)
Lower importance % (95% CI)	2.3 (1.3–3.3)	3.5 (1.7–5.4)	5.8 (2.3–9.4)

Weighted percent of organizations with 95% confidence interval; high importance, 4 or 5 on a scale of 1–5; lower importance, 1, 2, or 3 on a scale of 1–5.

**TABLE 3**

Communication channels available and disseminating workplace safety and health information by organization type

Channel	Organizations with channel available % (95% CI)	% disseminating workplace safety and health information through channel <sup>a</sup>
Business associations		
website	95.0 (91.2–98.8)	81.1
e-mail	95.4 (92.5–98.3)	95.1
Magazine	45.4 (37.0–53.8)	96.8
Newsletter	72.4 (64.5–80.2)	97.2
Technical journal	18.4 (11.5–25.4)	79.6
Conference	91.3 (86.8–95.8)	84.6
Professional associations		
website	90.1 (79.6–100)	71.3
e-mail	91.4 (83.0–99.7)	90.7
Magazine	57.8 (43.3–72.3)	97.6
Newsletter	68.8 (53.2–84.4)	97.0
Technical journal	38.0 (21.4–54.6)	92.2
Conference	95.0 (90.2–99.8)	79.0
Labor organizations		
website	90.8 (83.9–97.7)	93.1
e-mail	72.3 (61.4–83.2)	93.6
Magazine	56.9 (44.3–69.5)	97.6
Newsletter	53.8 (41.1–66.6)	92.1
Technical journal	10.9 (3.1–18.8)	100.0
Conference	76.9 (66.3–87.5)	78.2

<sup>a</sup>Percentage based on those with communication channel available.

TABLE 4

Workplace safety and health training courses offered by organization type

Training course	Business associations % (95% CI)	Professional associations % (95% CI)	Labor organizations % (95% CI)
OSH training provided	55.9 (47.1–64.7)	63.2 (48.2–78.2)	76.9 (66.7–87.1)
Electrical safety <sup>a</sup>	34.4 (23.6–45.3)	38.1 (17.0–59.3)	62.7 (51.4–74.1)
Emergency preparedness <sup>a</sup>	59.9 (48.9–70.9)	60.2 (39.0–81.4)	78.4 (66.7–90.2)
Equipment safety <sup>a</sup>	79.8 (70.6–89.1)	77.6 (60.2–95.0)	74.5 (62.1–86.9)
Ergonomics <sup>a</sup>	47.9 (36.6–59.3)	31.3 (11.0–51.6)	80.4 (69.4–91.4)
Explosives <sup>a</sup>	22.0 (13.0–31.1)	2.5 (0.0–6.7)	33.3 (19.7–46.9)
Hazardous substances <sup>a</sup>	69.5 (58.8–80.2)	60.2 (38.9–81.5)	84.0 (73.5–94.5)
Health and safety program <sup>a</sup>	76.3 (66.4–86.2)	58.7 (37.5–79.9)	84.0 (73.4–94.6)
Hearing loss/noise <sup>a</sup>	41.1 (30.0–52.2)	16.9 (0.4–33.4)	68.6 (55.4–81.9)
Job stress management <sup>a</sup>	25.2 (15.7–34.7)	42.8 (21.4–64.3)	49.0 (34.9–61.1)
Lifting safety <sup>a</sup>	52.5 (41.2–63.8)	58.7 (38.8–78.7)	76.4 (65.7–87.3)
Musculoskeletal disorders <sup>a</sup>	27.1 (16.6–37.5)	26.9 (7.7–46.0)	72.5 (59.9–85.2)
Occupational diseases <sup>a</sup>	17.1 (8.8–25.3)	40.4 (19.3–61.4)	68.6 (54.4–82.8)
OSHA training <sup>a</sup>	79.4 (70.6–88.2)	80.7 (65.6–95.7)	88.2 (78.7–97.8)
Personal protective equipment <sup>a</sup>	74.7 (64.2–85.1)	69.7 (50.6–88.9)	82.4 (71.6–93.1)
Respirator training <sup>a</sup>	42.3 (30.9–53.6)	33.8 (13.0–54.6)	66.7 (54.0–79.3)
Slips, trips, and fall <sup>a</sup>	46.0 (35.0–57.0)	44.3 (22.8–65.8)	76.5 (65.3–87.7)
Special worker populations <sup>a</sup>	9.9 (3.1–16.7)	17.9 (1.0–34.9)	39.2 (25.2–53.2)
Workplace violence <sup>a</sup>	16.0 (7.3–24.7)	12.9 (0.0–27.5)	56.0 (42.3–69.7)
Non-english OSH training <sup>a</sup>	30.0 (19.5–40.5)	20.0 (1.8–38.2)	44.0 (30.8–57.2)

<sup>a</sup>Percentage based on those that offer workplace safety and health training.



**TABLE 5**

Workplace safety and health materials distributed beyond those in formal training

	<b>Business associations % (95% CI)</b>	<b>Professional associations % (95% CI)</b>	<b>Labor organizations % (95% CI)</b>
Safety and health materials not part of formal training	67.7 (59.3–76.0)	39.3 (22.9–55.9)	69.8 (59.5–80.2)
Brochures <sup>a</sup>	61.5 (51.3–71.7)	36.8 (15.2–58.5)	64.3 (53.4–75.2)
Fact sheets <sup>a</sup>	65.7 (56.2–75.2)	34.7 (13.4–56.0)	72.7 (60.8–84.7)
Safety manuals <sup>a</sup>	67.4 (58.0–76.8)	35.2 (13.7–56.8)	55.4 (43.2–67.5)
Tool box talks <sup>a</sup>	32.8 (24.1–41.6)	25.1 (5.4–44.8)	41.1 (30.8–51.4)
Videos <sup>a</sup>	63.3 (53.2–73.4)	24.5 (6.5–42.6)	48.2 (35.5–60.9)
Non-english materials <sup>a</sup>	27.9 (18.2–37.5)	10.2 (0.0–25.4)	37.0 (23.6–50.3)

<sup>a</sup>Percentage based on those who distribute materials beyond formal training.

**TABLE 6**

Workplace safety and health needs and interest in NIOSH information and partnering

	<b>Business associations % (95% CI)</b>	<b>Professional associations % (95% CI)</b>	<b>Labor organizations % (95% CI)</b>
Unmet OSH needs			
Yes	34.4 (25.9–43.0)	26.1 (12.7–39.5)	61.0 (48.8–73.1)
No	52.8 (43.9–61.8)	63.5 (48.0–79.0)	29.7 (18.7–40.7)
Do not Know	12.7 (6.7–18.8)	10.4 (0.0–21.1)	9.4 (2.1–16.7)
Interest in receiving NIOSH information			
Yes	74.4 (66.6–82.3)	75.2 (60.0–90.4)	88.9 (81.3–95.5)
No	20.5 (13.2–27.8)	11.7 (0.7–22.6)	9.5 (2.3–16.7)
Do not Know	5.1 (0.9–9.2)	13.2 (0.8–25.5)	1.6 (0.0–4.8)
Interested in partnering with NIOSH			
Yes	56.7 (48.0–65.4)	48.3 (31.1–65.6)	71.0 (59.9–82.1)
No	27.5 (19.7–35.2)	31.2 (12.1–47.2)	17.7 (8.4–27.1)
Do not Know	15.8 (9.0–22.7)	20.5 (6.9–34.1)	11.3 (3.1–19.5)